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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,462	11/26/2003	Michael S. Westphall	105-01	5946

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GREENLEE WINNER AND SULLIVAN P C
4875 PEARL EAST CIRCLE
SUITE 200
BOULDER, CO 80301

EXAMINER	
FERNANDEZ, KALIMAH	
ART UNIT	**PAPER NUMBER**
2881	

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/723,462	WESTPHALL ET AL.	
	Examiner	Art Unit	
	Kalimah Fernandez	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *45-60* is/are pending in the application.

4a) Of the above claim(s) *1-44* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *45-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07-15-04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of the claimed inductive detector defined by claims 42-52 in the reply filed on 6-10-05 is acknowledged. The traversal is on the ground(s) that no sufficient searching/examining burden existed. This is not found persuasive because the searches of groups I and II are materially different. For example, the requisite search of group II includes class 324, subclass 207.15, which is not required for group I. Also, a search in class 250, subclass 283 is not required for group II.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 45 and 53-54 are rejected under 35 U.S.C. 102(b) as being anticipated by **"Inductive and capacitive sensor arrays for in situ composition sensors"** by Steenberg et al, Aerospace Conference, 2001, IEEE Proceedings, 10-17 March 2001, vol.1, page(s): 1/299 - 1/309.

4. Steenberg et al teach a fully shielded inductive detector having a sensing electrode with an axial bore and a shielding element with the sensing electrode located inside its axial bore (see fig.5 (a)).

5. As per claim 53, Steenberg et al teach the shielding element is cylindrical (see fig. 5(a)).

6. As per claim 54, Steenberg et al teach the sensing electrode is surrounded on all sides by the shielding element (see fig.5 (a)).

7. Claims 45 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by applicant-cited reference "**An Instrument for Measuring Electric Charge on Individual Aerosol Particles**" by Vercoulen et al, J. Aerosol Sci., vol.22, suppl.1, pp. S335-S338 (1991).

8. Vercoulen et al teach a fully shielded inductive detector having a sensing electrode with an axial bore and a shielding element with the sensing electrode located inside its axial bore (see pg. S337, para.1-2).

9. As per claim 53, Vercoulen et al teach the shielding element is cylindrical--- concentric rings.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 45-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Pat No 5,591,696 issued to Park et al.

12. Park et al teach an inductive detector having a sensing electrode (40) with an axial bore, internal end, and external end (see fig.2).

13. Park et al teach shielding elements (24, 26).

14. Park et al does not explicitly teach a shielding element having an axial bore wherein the sensing electrode is positioned (i.e. the shielding element entirely surrounds the sensing electrode (40)).

15. However, Park et al suggest the possibility that the shielding element have a cylindrical shape (see col.6, lines 28-34). Park et al also teach the adaptability of the shielding elements (24,26) to different shapes, wherein the size and shape of the elements fall within the level of ordinary skill in the art (see col.7, lines 11-20).

16. In other words, Park et al teach all the elements of the claimed invention and disclose the shielding elements' shape and size is an obvious designer's choice.

17. Thus, Park et al's disclosure makes obvious the claimed invention, because an ordinary artisan at the time of the invention could logically envisage a cylindrical shielding element surrounding the sensing electrode (40) after a fair reading of Park et al. One of ordinary skill would also logically infer that surrounding the entire sensing electrode (40) with a shielding element would lead to increased protection from unwanted particles.

18. As per claim 46, Park et al teach an insulator/spacer (see col.5, lines 44-50).

19. As per claims 47-48, Park et al teach a front end and backend shielding grids (24,26) connected to each other via (36). The combination of a cylindrical shielding body and two

shielding grids is an obvious modification of Park et al as discussed above. Moreover, Park et al teach the advantages of shielding grids on either side of the sensing electrode in col.7, line 57 extending to col.17.

20. As per claims 49 and 59, Park et al teach the shielding element held at an electric potential close to ground (see for example col.8, lines 38-44).

21. As per claims 50-51 and 56, Park et al teach a predetermined range of distance (see for example col.9, lines 30-65). One of ordinary skill could obviously derive the recited distances after a fair reading of Park et al.

22. As per claim 52 and 55, Park et al teach the shielding grids intersect the charge detection axis and extend entire across the sensing electrode face (see fig. 1).

23. As per claim 57, Park et al teach 90% transmission (col.7, lines 59-62).

24. As per claim 58, Park et al teach screen/grid (22).

25. As per claim 60, Park et al teach time-of-flight mass analysis (col.3, lines 1-5).

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Pat No 6,137,112 issued to McIntyre et al, US Pat No 6,828,572 issued to Reece et al; US Pat No 6,831,280 issued to Scherer illustrate the use of inductive detectors in ion implantation. US Pat No 6,784,421 issued to Park and US Pub No 2002/0190205 issued to Park illustrates cylindrical sensing electrode. US Pub. 2004/0219695 teaches the use inductive detection in bimolecular analysis.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 571-272-2470.

The examiner can normally be reached on Mon-Tues 6:30-3:30; Wed-Thurs 8-5 and Fri.9am-6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on 571-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KF

JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800